In the Claims

Please replace all prior versions, and listings, of claims in the application with the following list of claims:

1. (Previously Presented) A circuit for detecting an overcurrent in an element through which an A.C. supply current flows, comprising detecting a variation in the voltage between the terminals of the element beyond two thresholds, said circuit comprising:

a first comparator, assigned to the halfwaves of a first sign of the A.C. power supply, receiving on a reference input a first reference voltage setting a first one of said thresholds;

a second comparator, assigned to the halfwaves of a second sign of the A.C. power supply, receiving on a reference input a second reference voltage setting a second one of said thresholds; and

an input stage providing, to respective interconnected read inputs of the comparators, a voltage proportional to said voltage across said element, said stage comprising at least one first resistive element introducing a voltage drop between a first one of the terminals of the element and said read inputs.

2. (Original) The detection circuit of claim 1, supplied between a high supply rail and a ground to which is connected one of said terminals of the element not connected to said first resistive element.

3. (Original) The detection circuit of claim 2, wherein the input stage comprises:

a first series connection of two low-voltage diodes, between said high rail and the ground, the anode of a first diode being grounded while the cathode of a second diode is connected to the high rail; and

a second series connection, between said high rail and said ground, of at least two resistive elements, the midpoints of said first and second series connections being interconnected to said read inputs of said first and second comparators.

4. (Original) The detection circuit of claim 2, wherein said first and second reference voltages are set by at least one resistive dividing bridge formed between said high rail and the ground.

5. (Previously Presented) The detection circuit of claim 4, wherein said first and second reference voltages are set by a single resistive dividing bridge formed of a series connection, between said high rail and said ground, of three resistive elements, said thresholds being respectively sampled across the intermediary resistor of the bridge.

6. (Original) The detection circuit of claim 1, wherein outputs of the first and second comparators are combined.

7. (Original) The detection circuit of claim 6, wherein the outputs are combined by a logic two-input OR gate.

8. (Original) The detection circuit of claim 1, wherein the element that conducts an A.C. supply current is a bidirectional switch.

9. (Original) The detection circuit of claim 1, wherein the element that conducts an A.C. supply current is a resistor.

10. (Original) A circuit of protection against an overcurrent of a bidirectional switch in the on state, conducting an A.C. supply current, and comprising the detection circuit of claim 8.

11. (Original) A circuit of protection against an overcurrent of a bidirectional switch in the on state, comprising the detection circuit of claim 9, said resistor being in series with said switch.

12. (Currently Amended) A circuit for detecting an overcurrent in an element through which an A.C. supply current flows, comprising:

a first comparator, responsive to a first polarity of the A.C. supply, receiving on a reference input a first reference voltage that sets a first threshold;

a second comparator, responsive to a second polarity of the A.C. supply, receiving on a reference input a second reference voltage that sets a second threshold;

and input stage providing, to respective interconnected read inputs of the comparators, a voltage proportional to a voltage across the element, the input stage comprising at least one first resistive element introducing a voltage drop between a first one of the terminals of the element and the read inputs.

13. (Previously Presented) The detection circuit of claim 12, wherein the input stage comprises:

a first series connection of two low-voltage diodes, between said high rail and the ground, the anode of a first diode being grounded while the cathode of a second diode is connected to the high rail; and

a second series connection, between said high rail and said ground, of at least two resistive elements, the midpoints of said first and second series connections being interconnected to said read inputs of said first and second comparators.

14. (Previously Presented) The detection circuit of claim 12, wherein outputs of the first and second comparators are combined.

15. (Previously Presented) The detection circuit of claim 14, wherein the outputs are combined by a logic two-input OR gate.

16. (Previously Presented) The detection circuit of claim 12, wherein the element that conducts an A.C. supply current is a bidirectional switch.

17. (Previously Presented) The detection circuit of claim 12, wherein the element that conducts an A.C. supply current is a resistor.

18. (Previously Presented) The detection circuit of claim 12, supplied between a high supply rail and a ground to which is connected one of said terminals of the element not connected to said first resistive element.

19. (Previously Presented) The detection circuit of claim 18, wherein said first and second reference voltages are set by at least one resistive dividing bridge formed between said high rail and the ground.

20. (Previously Presented) The detection circuit of claim 19, wherein said first and second reference voltages are set by a single resistive dividing bridge formed of a series connection, between said high rail and said ground, of three resistive elements, said thresholds being respectively sampled across the intermediary resistor of the bridge.